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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,571

05/07/2007

Harry E. Orton

O091 0017/BMG

4125

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7590

03/20/2008

OYEN, WIGGS, GREEN & MUTALA LLP

480 - THE STATION

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CANADA

EXAMINER

DOLE, TIMOTHY J

ART UNIT

PAPER NUMBER

2831

MAIL DATE

DELIVERY MODE

03/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,571	Applicant(s) ORTON, HARRY E.	
	Examiner TIMOTHY J. DOLE	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract contains the legal phraseology "comprises" on line 3, which should be avoided.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1, 3/1, 4/3/1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Alles et al. (US 6,525,918).

Referring to claims 1 and 9, Alles et al. discloses a system and tool for diagnosing degradation of a plurality of wires (fig. 5) in an electrical system having plurality of loads (fig. 5 (72) and (76)) connected by the plurality of wires to a direct current power source (fig. 5 (14)), the plurality of wires arranged into a bundle near the power source (fig. 5), the system comprising: a current sensor (fig. 5 (26)) located proximate to the bundle for producing a signal representative of a current in the bundle; a signal processor (fig. 5 (22)) coupled to the sensor to receive the signal from the current sensor; a pattern database (column 3, lines 49-51) coupled to the signal processor to provide the signal processor with expected patterns of currents drawn by the plurality of loads (column 4, lines 21-24) and patterns of arcs which may occur in the plurality of wires (column 4, lines 28-31); and, an output device (column 4, lines 36-39: vehicle main computer) coupled to the signal processor to receive an indication of a location at which an arc occurred in the plurality of wires (column 4, lines 36-39).

Referring to claim 3/1, Alles et al. discloses the system as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)).

Referring to claim 4/3/1, Alles et al. discloses the system as claimed wherein the output device comprises a CPU of the mobile vehicle (column 4, lines 36-39: vehicle main computer).

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3/2 and 4/3/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Ishiko et al. (US 4,999,571).

Referring to claim 2, Alles et al. discloses the system as claimed except wherein the current sensor comprises an optical current sensor.

Ishiko et al. discloses an optical current sensor (fig. 5 (4)) for sensing the current through a wire (fig. 5 (9)).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the optical current sensor of Ishiko et al. into the system of Alles et al. for the purpose of providing a reliable, well-known, noninvasive current sensor (column 3, line 52 – column 4, line 11).

Referring to claim 3/2, Alles et al. discloses the system as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)).

Referring to claim 4/3/2, Alles et al. discloses the system as claimed wherein the output device comprises a CPU of the mobile vehicle (column 4, lines 36-39: vehicle main computer).

6. Claim 5/3/1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Zur et al. (6,590,396).

Referring to claim 5/3/1, Alles et al. discloses the system as claimed except wherein the output device comprises a display on a dashboard of the mobile vehicle.

Zur et al. discloses a system for monitoring battery discharge in a vehicle wherein the output device comprises a display on a dashboard of the mobile vehicle (column 9, lines 11-22).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the display of Zur et al. into the system of Alles et al. for the purpose of providing current information to a vehicle's user.

7. Claim 5/3/2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Ishiko et al. (shown above) as applied to claim 3/2 above, and further in view of Zur et al. (6,590,396).

Referring to claim 5/3/2, Alles et al. as modified discloses the system as claimed except wherein the output device comprises a display on a dashboard of the mobile vehicle.

Zur et al. discloses a system for monitoring battery discharge in a vehicle wherein the output device comprises a display on a dashboard of the mobile vehicle (column 9, lines 11-22).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the display of Zur et al. into the system of Alles et al. as modified for the purpose of providing current information to a vehicle's user.

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8. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Hale et al. (US 7,236,338).

Referring to claim 6, Alles et al. discloses a method for diagnosing degradation of a plurality of wires (fig. 5) in an electrical system (fig. 5 (12')) having plurality of loads (fig. 5 (72) and (76)) connected by the plurality of wires to a direct current power source (fig. 5 (14)), the plurality of wires arranged into a bundle near the power source (fig. 5), the method comprising: placing a current sensor (fig. 5 (26)) proximate to the bundle for producing a signal representative of a current in the bundle (fig. 5); monitoring a time-rate-of-change of the signal from the current sensor (column 4, lines 14-15); comparing the time-rate-of-change of the signal from the current sensor to expected patterns of currents drawn by the plurality of loads (column 4, lines 21-24) and patterns of arcs which may occur in the plurality of wires (column 4, lines 28-31); and, producing an indication of a location at which an arc occurred in the plurality of wires (column 4, lines 36-39).

Alles et al. does not disclose the arc location is produced by applying time domain reflectometry.

Hale et al. discloses a method of locating faults in a power system (abstract) by applying time domain reflectometry (column 6, lines 45-54).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the time domain reflectometry method of Hale et al. into the method of Alles et al. for the purpose of being able to detect and located multiple cable conditions (column 10, lines 26-30).

Referring to claim 7, Alles et al. discloses the method as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)), the method further comprising providing the indication of the location at which the arc occurred to a CPU of the mobile vehicle (column 4, lines 36-39: vehicle main computer).

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Hale et al. (shown above) as applied to claim 6 above, and further in view of Zur et al. (6,590,396).

Referring to claim 8, Alles et al. as modified discloses the method as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)).

Alles et al. does not disclose method further comprising displaying the indication of the location at which the arc occurred on a dashboard of the mobile vehicle.

Zur et al. discloses a method for displaying the indication of the location at which the arc occurred on a dashboard of the mobile vehicle (column 9, lines 11-22).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the display method of Zur et al. into the method of Alles et al. as modified for the purpose of providing current information to a vehicle's user.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to show the state of the art with respect to diagnosing wire degradation.

USPN 6,225,811 to Bruning et al.: This patent shows an apparatus for testing a plurality of wires in a bundle.

USPN 5,857,325 to Shimasaki et al.: This patent shows an apparatus for testing a opens and shorts in plural loads connected to a plurality of wires in a bundle.

USPN 5,483,153 to Leeb et al.: This patent shows an apparatus for testing the current to a plurality of loads by using load patterns.

USPN 5,337,013 to Langer et al.: This patent shows an apparatus for monitoring the current from a battery to a plurality of loads in a vehicle.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY J. DOLE whose telephone number is (571)272-2229. The examiner can normally be reached on Mon. thru Fri. from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy J. Dole/
Examiner, Art Unit 2858